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TEST REPORT

Report reference No. : AOCE260509943-P

Tested by (name + signature)..... : Sam He

Supervised by (name + signature): Leroy Liu

Approved by (name + signature)..... : Sanji Guan

Date of issue..... : 2026-06-11

Testing Laboratory Name : Zhongshan AOCE Testing Technology Co., Ltd.

Address : 5/F, Building A, No.5 Jingdi Road, Henglan, Zhongshan, Guangdong, China.

Applicant's Name : ZHEJIANG ALITE LIGHTING CO., LTD

Address : 2nd Floor, 8th Building, No. 188 East Development Avenue, Taizhou City, Zhejiang, China

Test specification

Standard..... : ANSI/IES TM-21-21
ANSI/UL 1598-2008

Test Report Form No..... : TRF.TM-21_B

TRF Originator..... : AOCE

Master TRF..... : Dated 2026-04

Test item description : LED STREET LIGHT

Trademark :

Manufacturer..... : Same as applicant

Factory : Same as applicant

Model and/or type reference : ZS03 120W

Rating(s) (V; Hz)..... : 85-265V~, 120W, 4000K





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LED Source	:	
LED Packages/Modules type	:	LUXEON 5050
LED Packages/Modules quantity ...	:	96 pcs
LED Package/Modules supplier	:	Lumileds
Number of test objects	:	1 sample

Date of receipt of test item	2026-05-09
Date(s) of performance of tests.....	2026-05-09 to 2026-06-11
General remarks This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government. The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing Testing Laboratory. This report will not be used as social proof function in China market.	

TEST METHOD**Temperature Measurement Test**

Maximum LED source operating temperature measurements were taken on one test sample per model with a thermocouple and temperature meter. The SSL sample was allowed to reach thermal equilibrium for at least 7 hours before measurements were taken. LED source

temperature was measured at the point as indicated by the included diagram in accordance with manufacturers declared hot spot location. The maximum temperature was recorded for the sample. A simulated ceiling or other enclosure may be used in accordance to UL 1598 as applicable

Driver current Measurement Test

During the temperature measurement test, measure the forward current for each LED package/array/module.

Lumen maintenance projection

The calculation is based on the Illumination Engineering Society's TM-21-21. Input measured temperature and current into "Energy Star TM-21 calculator", using LM-80 data, to project long term lumen maintenance.

Equipment List

ID	Instrument	Model name	Cal. date	Next cal. Date
Purified Power Source	AOCE-P-005	DPS-1010	2026.04.11	2027.04.10
Power meter	AOCE-P-010	PF-9811	2026.04.11	2027.04.10
Endurance Test	AOCE-S-173	GS-HWNJ-1500	2026.04.11	2027.04.10
Programmable Temperature & Humidity Chamber	AOCE-S-168	GS-TH1000W	2026.04.11	2027.04.10
Digital Thermal Recorder	AOCE-S-101	34970A+34901A	2026.04.11	2027.04.10

1. ISTMT (In Situ Temperature Measurement Test)**Environmental Condition:**

Temperature :	25,0°C
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Test Result:

Sample ID	Voltage (Vac)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
002	230,0	50	0,525	0,976	117,86

Thermocouple Location	LED Package Current (mA)	Temperature (°C)		LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp. (°C)
		Test result column 1	Test result column 2			
TMP1 (LED)	40.6	72,6	72,6	Lumileds LUXEON 5050	60	105
TMP2 (Driver)	N/A	62,3	62,3		N/A	
Ambient Temperature	N/A	25,0	25,0		N/A	

Note –

1. Test result column 1 displays actual stabilized temperatures.
2. Test result column 2 displays these temperatures normalized to 25°C ambient (TAIR) as per customer's request.
3. The SSL sample was allowed to reach thermal equilibrium for at least 7 hours before measurements were taken

2. ISTMT (In Situ Temperature Measurement Test)**Environmental Condition:**

Temperature :	50,0°C
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Test Result:

Sample ID	Voltage (Vac)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
002	230,0	50	0,524	0,976	117,55

Thermocouple Location	LED Package Current (mA)	Temperature (°C)		LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp. (°C)
		Test result column 1	Test result column 2			
TMP1 (LED)	40.6	89,3	89,3	Lumileds LUXEON 5050	60	105
TMP2 (Driver)	N/A	81,5	81,5		N/A	
Ambient Temperature	N/A	50,0	50,0		N/A	

Note –

4. Test result column 1 displays actual stabilized temperatures.
5. Test result column 2 displays these temperatures normalized to 50°C ambient (TAIR) as per customer's request.
6. The SSL sample was allowed to reach thermal equilibrium for at least 7 hours before measurements were taken

3. ISTMT (In Situ Temperature Measurement Test)**Environmental Condition:**

Temperature :	60,0°C
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Test Result:

Sample ID	Voltage (Vac)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
002	230,0	50	0,524	0,974	117,31

Thermocouple Location	LED Package Current (mA)	Temperature (°C)		LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp. (°C)
		Test result column 1	Test result column 2			
TMP1 (LED)	40.6	98,5*	95,5*	Lumileds LUXEON 5050	60	105
TMP2 (Driver)	N/A	85,6	85,6		N/A	
Ambient Temperature	N/A	60,0	60,0		N/A	

Note –

7. Test result column 1 displays actual stabilized temperatures.

8. Test result column 2 displays these temperatures normalized to 60°C ambient (TAIR) as per customer's request.

9. The SSL sample was allowed to reach thermal equilibrium for at least 7 hours before measurements were taken

*data for reference only.

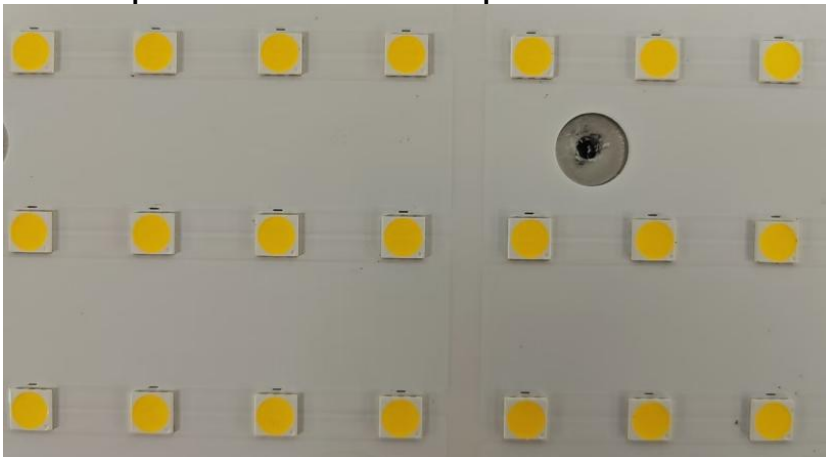
TMP1 location:

Temperature Measurement Point (TMP)



Ts Measurement

Thermocouple Location on the LED chips and lens:



Thermocouple Location on the LED driver:



4. Lumen Maintenance Life Projection According to ANSI/IES TM-21-21:

LM-80 Testing Details	
Total number of units tested per case temperature:	20
Number of failures:	0
Number of units measured:	20
Test duration (hours):	17000
Tested drive current (mA):	60
Tested case temperature 1 (T _c , ° C):	70
Tested case temperature 2 (T _c , ° C):	85
Tested case temperature 3 (T _c , ° C):	105

Test Data for 70° C Case Temperature		Test Data for 85° C Case Temperature		Test Data for 105° C Case Temperature	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
8000	99.26%	8000	98.97%	8000	99.45%
9000	99.06%	9000	98.74%	9000	98.97%
10000	98.85%	10000	98.48%	10000	98.73%
11000	98.59%	11000	98.15%	11000	97.91%
12000	98.36%	12000	97.90%	12000	97.58%
13000	98.08%	13000	97.56%	13000	97.29%
14000	97.81%	14000	97.20%	14000	96.91%
15000	97.58%	15000	96.93%	15000	96.53%
16000	97.38%	16000	96.71%	16000	96.24%
17000	97.18%	17000	96.41%	17000	95.96%

In-Situ Inputs:

Drive current for each LED package/array/module (mA):	40.6
In-situ case temperature (T _c , ° C):	89.3
Percentage of initial lumens to project to (e.g. for L ₇₀ , enter 70):	70

Note: use T_c data of T_a = 50°C to project lifetime, as T_c of T_a = 60°C exceeding the limit.

Results:

Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	87.47%
Calculated L70 (hours):	122,000
Reported L70 (hours):	>102000

Sample Photo



-- END OF TEST REPORT --

STATEMENT

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

If you have any objection to this report, please submit it to the test unit within 15 days from the date of receipt of the report.

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